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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,170	10/06/2003	David Joseph Kropaczek	24GA6001	2278

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HARNESS, DICKEY & PIERCE, P.L.C.  
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RESTON, VA 20195

EXAMINER
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CRAIG, DWIN M

ART UNIT	PAPER NUMBER
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2123

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/678,170

Applicant(s)

KROPACZEK ET AL.

Examiner

Dwin M. Craig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 9-19 and 21-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-19 and 21-32 is/are rejected.
- 7) ☒ Claim(s) 2, 10, 18, 21 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/06 has been entered.

1.1 Claims 1-7, 9-19 and 21-32 have been presented for reconsideration based on Applicants' amendments and arguments and Request for continued examination under 37 CFR 1.114.

### *Claim Objections*

2.1 Claims 2 and 10 are objected to because it is unclear to the examiner exactly how a Graphical User Interface *selects* fresh fuel bundles.

2.2 Claim 18 is objected to because of the following phrase, "*wherein the graphical user interface selectively populate a loading map with fuel bundles...*" it is unclear how a Graphical User Interface can populate a loading map and the tenses of the adverbs are in the wrong voice, for example "*populate*" should be "*populates*".

2.3 Claim 21 is objected to because of the following claim language, "*the selectively populating step allows a user to select fuel bundles from the fuel pool database...*" the Examiner notes that the phrase *allows* fails to clearly state the *metes and bounds* of claim 21 because the claim appears to cover anything and everything that does not prohibit, "*the selectively populating step allows a user to select fuel bundles from the fuel pool database...*"

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2.4 Claim 28 is objected to because the following sentence fragment doesn't make sense, further comprising: *second selectively populating the loading map with different types of fresh fuel bundles.*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7, 9-19 and 21-32 are rejected under 35 USC § 103(a) for being unpatentable over “MIROBURN-B2 TO RETRAN-3D Linking Code by Donald Hines and “CPW for SIMULATE-3 by Kevin O’Sullivan contained in the “*Update...*” news letter, hereafter referred to as the *O’Sullivan* reference in view of U.S. Patent 5,414,809 to Hogan.

3.1 As regards independent claim 1 the *O’Sullivan* teaches *providing a graphical user interface that allows a user to selectively populate a loading map with <a representation of> fuel bundles residing in at least one fuel pool, wherein the graphical user interface includes one or more loading tools* (pages 1 & 2 and more specifically, “In both PWR and BWR versions, the core engineer design engineer can swap assembly locations in the core or “drag and drop” assemblies and their modeling data from the Spent Fuel Pool or Fresh Fuel locations to the core.”) and *placing the fuel bundles in the at least one fuel pool according to the selected loading map* (page 1, “...to discharge fuel from the core, rearrange the remaining fuel, **load** fresh fuel, **reinsert** prior burned assemblies from the spent fuel pool...” clearly the intent of *O’Sullivan* is to load or reload fuel bundles into fuel pools, more specifically *O’Sullivan* teaches transferring the fuel bundles to the “core” which is functionally equivalent to Applicants’ claimed *reload fuel table* because, the *reload fuel table* will end up being what is loaded into the *core*).

However, *O’Sullivan* does not expressly disclose *wherein the graphical user interface includes one or more loading tools for selecting and moving a filtered fuel table to a reload fuel table*.

*Hogan* teaches the use of graphical user interface “*tool for selecting and moving*” data items from one list to another list (specifically Figure 9 shows a GUI tool identical to the GUI tool disclosed in the Applicants’ Figure 3 item # 160).

*O’Sullivan* and *Hogan* are from the same problem solving area of providing Graphical User Interfaces for performing data manipulation.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have used the GUI tool of *Hogan* in the GUI environment of *O’Sullivan* to transfer items from the Spent Fuel Pool locations to the Core (which is the functional equivalent of Applicants’ claimed *reload fuel table*.)

The suggestion for doing so would have been to provide an easy to use interface for moving data from one table, *spent fuel pool* to another table *a fresh fuel table* without any special knowledge of a computer interface. The efficiency and ease of use would motivate an artisan of ordinary skill to provide the GUI tool as disclosed in *Hogan*, see also *Hogan* Col. 1 lines 34-69 and Col. 2 lines 1-17.

Therefore, it would have been obvious to combine *Hogan* with *O’Sullivan* in order to obtain the invention as specified in claims 1-7, 9-19 and 21-32.

**3.2** Regarding claim 2, *O’Sullivan* teaches the functional equivalent of *storing at least one fuel pool database, the fuel database including a list of at least a portion of the fuel bundles residing in the fuel pool*; (see the figures on page 2 which show *lists* see the “Spent Fuel Pool table and the “Fresh Fuel Listing” table, both of these tables teach lists of fuel bundles) *and wherein the graphical user interface selects fuel bundles from the fuel pool database to populate*

*the loading map* (page 1, “The CPW is written in Visual Basic with an ODBC database connection to Access, SQL, Oracle or Sybase as well as Microsoft Excel and Word.”).

3.3 Regarding claim 3, *O’Sullivan* teaches, *wherein the fuel database indicates one or more attributes for the listed fuel bundles* (page 2 in the figure “Fresh Fuel Listing” “Fuel Type” and “Fuel Descrip” are attributes).

3.4 Regarding claim 4, *O’Sullivan* teaches, K-Infinity (page 2 “Spent Fuel Pool” column label in the figure).

3.5 Regarding claims 5, *O’Sullivan* teaches, database management tools, (pages 1 & 2 “Access, SQL, Oracle or Sybase as well as Microsoft Excel and Word.”).

3.6 Regarding claim 6, *O’Sullivan* teaches or substantially teaches the functional equivalent of, *the fuel pool database indicates one or more attributes* (see the figures on page 2 which show attribute fields for the “Spent Fuel Pool and the “Fresh Fuel Listing” for example “Fuel Type”, Num. Avail.” These are attributes) and *the at least one fuel pool database management tools include filtering the listed fuel bundles according to at least on of the attributes* (pages 1 & 2 “Access, SQL, Oracle or Sybase as well as Microsoft Excel and Word” Further, the program *excel* as expressly disclosed allows sorting according to different criteria different data items, which is functionally equivalent to *filtering*).

3.7 Regarding claim 7, *O’Sullivan* teaches or suggests, *the fuel pool database indicates one or more attributes* (see the figures on page 2 which show attribute fields for the “Spent Fuel Pool and the “Fresh Fuel Listing” for example “Fuel Type”, Num. Avail.” these are attributes) and *the at least one fuel pool database management tools include sorting the listed fuel bundles according to at least on of the attributes* (pages 1 & 2 “Access, SQL, Oracle or Sybase as well as

Microsoft Excel and Word” Further, the program *excel* as expressly disclosed allows sorting according to different criteria different data items).

3.8 Regarding claim 9 *O’Sullivan* teaches the functional equivalent of *wherein the graphical user interface further allows the user to selectively populate the loading map with different types of fresh fuel bundles* (page 2 “Fresh Fuel Listing”).

3.9 Regarding claim 10, *O’Sullivan* teaches or makes obvious, *storing at least one fresh bundle type database, the fresh type bundle database including a list of fresh bundle types;*(page 2 note the figure labeled “Fresh Fuel Listing” and further the examiner notes that Microsoft® EXCEL provides a method to *store* data) *and wherein the graphical user interface selects fresh fuel bundle types from the fresh bundle type database to populate the loading map* (Page 1 “The core design engineer can quickly evaluate minor adjustments in a loading pattern using a 4-node per assembly Quarter Core Map that is synchronized with a full core map and set of Shuffle windows used to discharge fuel from the core, rearrange the remaining fuel, load fresh fuel, and reinsert prior burned fuel assemblies from the spent fuel pool...”).

3.10 Regarding claim 11, *O’Sullivan* teaches, *wherein the fresh fuel bundle type database indicates one or more attributes for the fresh fuel bundle types* (page 2 in the figure “Fresh Fuel Listing” “Fuel Type” and “Fuel Descrip” are attributes).

3.11 Regarding claim 12, *O’Sullivan* teaches, *wherein the attributes include at least one of mechanical design, ...k infinity* (Page 2 “Spent Fuel Pool” K-Infinity is the 7<sup>th</sup> column from the left).

3.12 Regarding claim 13, *O’Sullivan* teaches, *wherein the graphical user interface includes one or more fresh bundle type database management tools for aiding in the fresh fuel bundle*



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*type selection process* (pages 1 & 2 “Access, SQL, Oracle or Sybase disclose software programs that contain tools for database management, more specifically Sybase provides database management tools).

**3.13** Regarding claim 14, *O’Sullivan teaches, wherein the fresh bundle type database includes one or more attributes for the fresh fuel bundle types; (“Fresh Fuel Listing” page 2 and “Fuel Type” is an attribute) and the at least one of the fresh bundle type database management tools includes filtering the listed fresh fuel bundle type according to at least one of the attributes* (pages 1 & 2 “Access, SQL, Oracle or Sybase disclose software programs that contain tools for database management, more specifically Sybase provides database management tools, these tools can be used with SQL strings to sort different elements of a data base or filter those elements by specific criteria, an artisan of ordinary skill at the time of the invention would know to use these database tools to perform the steps being expressly claimed by the Applicants.).

**3.14** Regarding claim 15, *O’Sullivan teaches, wherein the fresh bundle type database indicates one or more attributes for the listed fresh fuel bundle types; and the at least one of the fresh bundle type database management tools includes sorting the listed fresh fuel bundle types according to one of the attributes* (pages 1 & 2 “Access, SQL, Oracle or Sybase disclose software programs that contain tools for database management, more specifically Sybase provides database management tools, these tools can be used with SQL strings to sort different elements of a data base or filter those elements by specific criteria, an artisan of ordinary skill at the time of the invention would know to use these database tools to perform the steps being expressly claimed by the Applicants).

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**3.15** Regarding claim 16, *O'Sullivan* does not expressly disclose, *wherein the graphical user interface includes one or more fresh bundle type loading tools*. It is noted that *O'Sullivan* does teaches a graphical user interface see page 2.

However, *Hogan* discloses, a plurality of GUI tools (Figures 9 thru 15).

**3.16** Regarding claim 17, it would have been obvious to an artisan of ordinary skill to use the teachings of *O'Sullivan* to perform nuclear fuel reloading on more than one reactor core, this is merely claiming performing a *duplicate* process on a *duplicate* reactor core, see MPEP 2144.04 (section VI. Reversal, Duplication, or Rear-Rangement of Parts).

**3.17** Regarding claim 18, *O'Sullivan* teaches, *wherein the graphical user interface selectively populate a loading map with fuel bundles residing in more that one fuel pool* (see page 2 which discloses a teaching of a GUI with more than one fuel pool the table labeled, "Spent Fuel Pool" and the table labeled "Fresh Fuel Listing").

**3.18** Regarding claim 19, see the rejection of claim 1 above.

**3.19** Regarding claim 21, *O'Sullivan* teaches, *accessing a fuel pool database that includes a list of at least a portion of the fuel bundles residing in the fuel pool* (page 2 discloses lists of fuel bundles arraigned in a form that could have been accessed from a database).

**3.20** Regarding claim 22, see the rejection of claim 3 above.

**3.21** Regarding claim 23 see the rejection of claim 4 above.

**3.22** Regarding claim 24, see the rejection of claim 14 above.

**3.23** Regarding claim 25, see the rejection of claim 14 above.

**3.24** Regarding claim 26, see the rejection of claim 15 above.

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3.25 Regarding claim 27, *O'Sullivan* suggests, *using one or more loading tools to aid in selectively populating step* (page 1, "...to discharge fuel from the core, rearrange the remaining fuel, **load** fresh fuel, **reinsert** prior burned assemblies from the spent fuel pool..." clearly the intent of *O'Sullivan* is to load or reload fuel bundles into fuel pools, more specifically *O'Sullivan* teaches transferring the fuel bundles to the "*core*" which is functionally equivalent to Applicants' claimed *reload fuel table* because, the *reload fuel table* will end up being what is loaded into the *core*).

3.26 Regarding claim 28, *O'Sullivan* teaches, *second selectively populating the loading map with different types of fresh fuel bundles* (page 2 the table labeled "Fresh Fuel Listing").

3.27 Regarding claim 29, see the rejection of claim 10 above.

3.28 Regarding claim 30, see the rejection of claim 17 above.

3.29 Regarding claim 31, see the rejection of claim 18 above.

3.30 Regarding claim 32, see the rejection of claim 1 above.

### ***Conclusion***

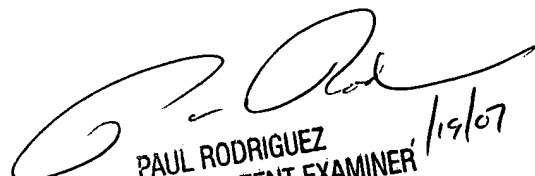
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dwin McTaggart Craig

  
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TECHNOLOGY CENTER 2100  
1/19/07